partially removed for optical imaging. The exposed surface of the cortex was stained with voltage- sensitive dye for 1 hour. After 10 minutes of EA stimulation with low frequency/high intensity or high frequency/low intensity on Zusanli (ST36) and Yinlingquan (SP9), optical signals were recorded from the primary somatosensory (SI) cerebral cortex using optical imaging.

Results: The displayed cortex images showed propagated and amplified neural activities in the SI cortex area after electrical stimulation of the peripheral receptive field of nerve-injured rats. After EA stimulation with either low frequency/high intensity or high frequency/low intensity, optical signals and the area of activation in the SI cortex decreased substantially and were followed by time-dependent recovery.

Conclusion: This study provides solid evidence that EA stimulation with low frequency/high intensity or high frequency/low intensity has similar inhibitory effects on the excited neuronal signaling caused by painful stimuli. This research was supported by the Basic Science Research Program through the National Research Foundation (NRF) funded by the Ministry of Science, ICT & Future Planning (No. 2014R1A2A2A04004407).

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P1.054

Neuroprotective effects of Liriope platyphylla extract against H2O2-induced cytotoxicity in the human SH-SY5Y neuroblastoma cells

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Purpose: Oxidative stress is involved in neuronal cell death and mitochondrial dysfunction in neurodegenerative diseases. Liriope platyphylla (LP) has been suggested to have anti-inflammation, anti-bacterial, and anti-cancer effects. However, neuroprotective effects of LP on the neuronal cells are still unknown. In this study, we examined whether LP ethanolic extract (LPE) had neuroprotective effect on human SH-SY5Y neuroblastoma cells against hydrogen peroxide (H2O2)-induced cell injury.

Methods: To test neuroprotective effects of LPE, we performed cell viability assay and western blot analysis. In addition, mitochondrial membrane potential (MMP) and oxidative stress were performed to evaluate the anti-apoptotic and anti-oxidant effects.

Results: Pretreatment of LPE significantly protected the H2O2-induced decrease of SH-SY5Y cell viability. Increased intracellular oxidative stress and mitochondrial dysfunction by H2O2 was attenuated by pretreatment of LPE, resulted in prevented SH-SY5Y cell injury. Treatment of 100 μM H2O2 significantly induced Poly [ADP-ribose] polymerase (PARP) and caspase-3 cleavage which is blocked by LPE. We found that p38 activation was involved in neuroprotective effects of LPE. These results suggest that LPE has neuroprotective effects against H2O2-induced apoptotic cell death by modulation of p38 activation in the SH-SY5Y cells.

Conclusion: Current findings suggest that LPE protects SH-SY5Y cells from H2O2-induced cell injury through inhibition of apoptosis, oxidative stress and mitochondrial dysfunction and by modulation of p38 MAP kinase. Therefore, LPE has potential neuroprotective effects which may be neuroprotective in neurodegenerative diseases and aging- related dementia.

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Combined Effects of Manilkara zapota L. with Metformin of Blood Glucose Levels in Rats

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Purpose: Research purposes to determine the interaction combination juice of Manilkara zapota L. and metformin.

Methods: Research used the white rat's for the experience ages 2-3 month weight account 100-150 gram for about 18 rat's devide into 6 groups. (I) negative controls (aquadest), (II) juice of Manilkara zapota L. 18,2 g/kgBB, (III) metformin 50 mg/kgBB, (IV) metformin 100 mg/kgBB, (V) combination juice of Manilkara zapota L. and metformin 50 mg/kgBB, and (VI) combination juice of Manilkara zapota L. and metformin 100 mg/kgBB. Data collected after treatment in 4 hours with in interval 1 hours. Data analysis used repeated ANOVA supported with Duncan test.

Results: The result shown that percent reduce of group I, II, III, IV, V and IV are 25,51±4,79; 36,42±17,69; 18,14±9,79; 51,67±20,34; 25,81±2,63; 28,05±14,06, respectively.

Conclusion: In conclusion that the combination juice of Manilkarazapota L. and metformin can decreasing of metformin effect.

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Effects of Water extract of Seahorse Hippocampus on testosterone secretion in male mice

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Purpose: Testosterone is essential for normal male fertility, controlling both the initiation and maintenance of spermatogenesis. Therefore, testosterone level is important factor in achieving male fertility.

Methods: In this study, to examine effects of Water extract of Seahorse Hippocampus (WSH) on sperm parameter and testosterone level, we examined sperm parameters and measured testosterone level. C57BL/c mice were divided into five groups (the normal group, cyclophosphamide (CP)